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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/891,861	06/25/2001	Randy C.H. Chang	VIS86-118CB	4479

28112 7590 03/13/2003

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28 DAVIS AVENUE  
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EXAMINER

MACARTHUR, SYLVIA

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 03/13/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/891,861

**Applicant(s)**

CHANG, RANDY C.H.

**Examiner**

Sylvia R MacArthur

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 11 February 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hempel, Jr. (USP 5,895,270) in view of Aiyer (USP 6,302,770).

Hempel, Jr. teaches an improved CMP apparatus 30 comprising a plurality of semiconductor devices including a plurality of carrier devices 14 (comprising nesting means). A plurality of polishing pad mechanisms 12 are associated with each carrier device so that each of the plurality of polishing pad 18 mechanisms separately and approximately simultaneously polishes one of the plurality of polishing pad mechanisms. The polishing pad mechanism is configured to rotate not only about the axis of spindle 16, but also in a horizontal and vertical direction.

Hempel, Jr. fails to teach a coaxial polishing dressing head assembly.

Aiyer teaches an in-situ pad conditioner for CMP polisher.

A retractable (obviously removably attached) pad-conditioner 208 is positioned along the bottom perimeter of a wafer carrier 202. The pad-conditioner structure rotates in unison with the wafer carrier. Figure 2 illustrates the conditioner structure 208, holding a wafer (nesting) 206 under a carrier insert 204. The carrier 202 is positioned above a pad 210 laid on top of platen 212. The

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condition structure (dressing ring) 208 defines a ring structure. The structure is provided with protruding embedded diamond grit particles 208CD.

*The motivation to exchange the pad-conditioner for the conventional carrier device of Hempel, Jr. is to allow for conditioning a pad in CMP without stopping the polishing process as discussed in the abstract of Aiyer.*

Thus, it would have been obvious for one of ordinary skill in the art at the time of the claimed invention to modify the polishing system of Hempel, Jr. with the apparatus of Aiyer.

3. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hempel, Jr. (USP 5,895,270) in view of Aiyer (USP 6,302,770), in further view of Shimizu et al (USP 6,176,762).

The teachings of Hempel, Jr., Aiyer were discussed above.

Neither teaches a dresser ring comprising ceramic.

Shimizu teaches a dressing plate made of sintered porous alumina (ceramic). The plate is then wax-bonded to an impregnated sealed layer.

Shimizu teaches that in manufacturing a ceramic dresser a binder is used to reinforce the structure as well as adhere other layers, see column 3 lines 2-10.

Thus, it would have been obvious at the time of the claimed invention to manufacture the dressing ring of Aiyer out of ceramic and utilize a binder *in the construction as is taught by Shimizu in order to reinforce the structure as well as adhere other layers.*

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over

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Hempel, Jr. (USP 5,895,270) in view of Aiyer (USP 6,302,770), in further view of Shimizu et al (USP 6,176,762), as evidenced by Erickson (USP 6,080,216).

The teachings of Hempel, Jr., Aiyer, and Shimizu were discussed above.

Neither teaches a glass frit binder.

*The use of glass frit binder is a well known suitable binder in the manufacture of ceramic articles as evidenced by Erickson.*

Thus, it would have been obvious for one of ordinary skill in the art to utilize glass frit as a binder in the manufacture of the ceramic dressing ring produced from the teachings of Shimizu.

#### ***Response to Arguments***

5. Applicant's arguments filed February 11, 2003 have been fully considered but they are not persuasive. Applicant argues about the merits of Hempel, Jr. and Aiyer individually. In response to applicant's arguments against these references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Regarding the argument against the use of Shimizu, applicant fails to note the crux of the rejection. Examiner relied upon Shimizu merely as prior art that suggests the use of ceramic and a binder as reinforcement as materials of construction. Furthermore, Shimizu does teach a ceramic dresser. The intended use of the dresser is not given patentable weight.

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Similarly, the teachings of Erickson were relied upon to suggest the use of a glass frit binder. The motivations to combine the references were also clearly defined and have been italicized for emphasis.

### ***Conclusion***

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

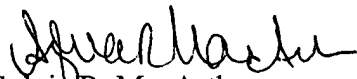
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

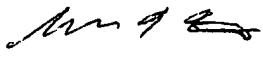
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R MacArthur whose telephone number is 703-306-5690. The examiner can normally be reached on M-F during the core hours of 8 a.m. and 2 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory L. Mills can be reached on 703-308-1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

  
Sylvia R. MacArthur  
March 11, 2003

  
BENJAMIN L. UTECH  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700